

WHAT IS CLAIMED IS:

1. A method for managing a reusable storage medium having a plurality of media blocks, where a particular media block is included in a media set if the media block is used to store at least a portion of one linearly ordered data block, the method comprising:

creating an active window table to monitor the at least one media block in the media set;

identifying any media blocks in the active window table that store only data blocks that have become expired;

determining whether any of the identified media blocks is a reference media block that is an oldest media block in the media set;

removing any identified media blocks from the active window table;

and

updating, if the identified media block is the reference media block, the active window table to indicate the reference media block as the oldest media block of the remaining media blocks in the active window table.

2. The method of claim 1 further comprising:

adding any identified media blocks to the scratch pool list for future reuse of identified media blocks.

3. The method of claim 2 wherein the active window table is a data structure created and updated by a data backup program used with an operating system in a computer system.

4. The method of claim 1 wherein the identifying, determining, removing and updating are repeated to manage the storage medium.

5. The method of claim 1 wherein a data block expires if an expiration date for the data block has been passed.
6. The method of claim 1 wherein the active window table comprises at least one of a data block sequence identifier, a media block identifier, a reference block identifier, a media block sequence identifier, and an expiration date identifier.
7. The method of claim 6 further comprising:
updating the media block sequence identifier for each media block in the media set, where the media block sequence identifier indicates the sequential order of the media block used to store at least a portion of one data block in the reusable storage medium.
8. The method of claim 1 further comprising:
determining whether an additional data block can be stored in a most recent media block in the media set.
9. The method of claim 8 further comprising:
storing, if the additional data block can be stored in the most recent media block in the first set, the additional data block in the most recent media block.
10. The method of claim 8 further comprising:
selecting, if an available storage memory in the most recent media block is insufficient to store the additional data block, an additional media block from the scratch pool list;
confirming an allocation of the selected media block; and
storing the additional data block in the allocated media block.
11. An apparatus for managing a reusable storage medium having a plurality of

media blocks, where a particular media block is included in a media set if the media block is used to store at least a portion of one linearly ordered data block, the apparatus comprising:

- a memory for storing a data backup program and an operating system;
- a processor for performing a method upon executing the data backup program

with the operating system, the method comprising:

- identifying any media blocks in the active window table that store only data blocks that have become expired;

- determining whether any of the identified media blocks is a reference media block that is an oldest media block in the media set;

- removing any identified media blocks from the active window table;

- and

updating, if the identified media block is the reference media block, the active window table to indicate the reference media block as the oldest media block of the remaining media blocks in the active window table.

12. The apparatus of claim 11 wherein the method further comprises:

- adding any identified media blocks to the scratch pool list for future reuse of identified media blocks.

13. The apparatus of claim 11 wherein the identifying, determining, removing and updating are repeated to manage the storage medium.

14. The apparatus of claim 11 wherein the active window table comprises at least one of a data block sequence identifier, a media block identifier, a reference block identifier, a media block sequence identifier, and an expiration date identifier.

15. The apparatus of claim 14 wherein the method further comprises:

- updating the media block sequence identifier for each media block in the media

set, where the media block sequence identifier indicates the sequential order of the media block used to store at least a portion of one data block in the reusable storage medium.

16. A computer readable medium storing a software program that, when executed by a computer, causes the computer to perform a method for managing a reusable storage medium having a plurality of media blocks, where a particular media block is included in a media set if the media block is used to store at least a portion of one linearly ordered data block, the method comprising:

creating an active window table to monitor the at least one media block in the media set;

identifying any media blocks in the active window table that store only data blocks that have become expired;

determining whether any of the identified media blocks is a reference media block that is an oldest media block in the media set;

removing any identified media blocks from the active window table;
and

updating, if the identified media block is the reference media block, the active window table to indicate the reference media block as the oldest media block of the remaining media blocks in the active window table.

17. The computer readable medium of claim 16 wherein the method further comprises:

adding any identified media blocks to the scratch pool list for future reuse of identified media blocks.

18. The computer readable medium of claim 17 wherein the active window table is a data structure created and updated by a data backup program used with an operating system in a computer system.

19. The computer readable medium of claim 16 wherein the identifying, determining, removing and updating are repeated to manage the storage medium.

20. The computer readable medium of claim 16 wherein a data block expires if an expiration date for the data block has been passed.

21. The computer readable medium of claim 16 wherein the active window table comprises at least one of a data block sequence identifier, a media block identifier, a reference block identifier, a media block sequence identifier, and an expiration date identifier.

22. The computer readable medium of claim 21 wherein the method further comprises:

updating the media block sequence identifier for each media block in the media set, where the media block sequence identifier indicates the sequential order of the media block used to store at least a portion of one data block in the reusable storage medium.

23. The computer readable medium of claim 16 wherein the method further comprises:

determining whether an additional data block can be stored in a most recent media block in the media set.

24. The computer readable medium of claim 23 wherein the method further comprises:

storing, if the additional data block can be stored in the most recent media block in the first set, the additional data block in the most recent media block.

25. The computer readable medium of claim 23 wherein the method further

comprises:

selecting, if an available storage memory in the most recent media block is insufficient to store the additional data block, an additional media block from the scratch pool list;

confirming an allocation of the selected media block; and
storing the additional data block in the allocated media block.